IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF TEXAS MARSHALL DIVISION

LIGHT TRANSFORMATION TECHNOLOGIES LLC

NO. 2:12-CV-826-MHS-RSP (LEAD CASE)

v.

CONSOLIDATED

LIGHTING SCIENCE GROUP CORP., et al.

LIGHT TRANSFORMATION TECHNOLOGIES LLC

NO. 2-12-cv-827-MHS-RSP

v.

GENERAL ELECTRIC COMPANY et al.

PLAINTIFF'S OPENING CLAIM CONSTRUCTION BRIEF

Henry M. Pogorzelski COLLINS, EDMONDS POGORZELSKI SCHLATHER & TOWER, PLLC 1616 South Voss Road, Suite 125 Houston, Texas 77057

Stafford Davis THE STAFFORD DAVIS FIRM, PC 305 S. Broadway, Suite 406 Tyler, Texas 75702

ATTORNEYS FOR PLAINTIFF LIGHT TRANSFORMATION **TECHNOLOGIES LLC**

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Plaintiff, Light Transformation Technologies LLC ("LTT"), through its undersigned legal counsel, and pursuant to P.R. 4-5(a), respectfully submits its Opening Claim Construction Brief.

I. INTRODUCTION

Plaintiff is the exclusive licensee of the two asserted patents, U.S Patent No. 8,220,959 ("the '959 patent") (Exhibit 1) and US Patent No. 6,951,418 ("the '418 patent") (Exhibit 2). Both patents are entitled "Highly efficient luminaire having optical transformer providing precalculated angular intensity distribution and method therefore," and both claim priority to US Patent No. 6,543,911 ("the '911 patent") (Exhibit 3) and share essentially the same specification. The complete file histories for these patents are being separately submitted in an Appendix to this brief. Plaintiff contends that certain defendants infringe claims 1, 3, 4, 6 and 7 of the '959 patent and claim 24 of the '418 patent. Plaintiff is no longer asserting the '911 patent in these consolidated litigations.

The '911 patent was previously asserted in two related litigations before this Court. The '911 patent is presently the subject of an ongoing *inter partes* reexamination brought by third party Volkswagen Group of America ("VGA"), a defendant in one of the two prior related litigations. The '959 patent was previously the subject of an *inter partes* review ("IPR") also initiated by VGA. That IPR has now been dismissed. However, on January 6, 2014, defendant GE Lighting Solutions, LLC filed its own IPR petition for the '959 patent. A decision from the Patent Trial and Appeal Board ("PTAB") as to whether there are grounds to initiate trial is expected by June 18, 2014. See 35 U.S.C. § 314 (six month deadline).

II. SUMMARY OF DISPUTED CLAIM CONSTRUCTIONS

The following table provides the parties' competing proposed constructions. Certain portions are underlined to highlight the differences between the parties' respective positions.

¹ Light Transformation Technologies LLC v. Anderson Custom Electronics, Inc. et al., No.09-cv-00354-TJW-CE (E.D. Tex.) and Light Transformation Technologies LLC v. Alliance Electronics Corp., No.09-cv-00357-TJW-CE.

'959 Patent

Disputed Term	Plaintiff's Construction	Defendants' Construction
redirects	Changing the direction of light	Changing the direction of light
	rays.	rays, while maintaining the
		ordering of the rays and the relative
		intensity among the ensemble of
		rays.
redistributing /	Changing the angular intensity	Changing the angular intensity
redistributes	distribution of light rays, including	distribution of light from a light
	changing the relative order or	source by changing the ordering
	sequence of light rays.	and relative intensity among the
		ensemble of rays.
light transformer	Needs no construction.	An optic that is not round in that it
	Alternatively, a structure that	can be extended in a horizontal
	changes or transforms light in some	direction perpendicular to an
	manner.	optical axis.
highly efficient	Needs no construction.	Indefinite.
axis of light	Needs no construction.	Indefinite.
direction		
low divergence or	Needs no construction.	To the extent "axis of light
substantially parallel	Alternatively, "low divergence"	direction" can be construed,
with an axis of light	means diverging less than about 15	Defendants propose the following
direction	degrees from the axis of light	construction: all rays from the light
	direction.	transformer are nearly parallel to an
		axis of light direction.
second/third/fourth	Needs no construction.	second end - an end of the light
end	Alternatively, in the context of a	transformer that is different than
	cross section of a light transformer,	and discrete from the first, third,
	a second/ third/fourth extremity.	and fourth ends.
		third end - an end of the light
		transformer that is different than
		and discrete from the first, second,
		and fourth ends.
		fourth end - an end of the light
		transformer that is different than
		and discrete from the first, second,
1 1	N. 1	and third ends.
second member	Needs no construction.	a member different than and
	Alternatively, in the context of a	discrete from the first member
	cross section of a light transformer,	
#10mon out!1	a second region.	on antical alamant that is along
planar optical	An element <u>or region</u> that is planar	an optical element that is planar and
window	and that has a neutral impact on the	that has a neutral impact on the
	passage of visible light, meaning	passage of visible light, meaning
	major parameters of light do not	that major parameters of light do

Disputed Term	Plaintiff's Construction	Defendants' Construction
	change.	not change.
second planar optical window	Needs no construction, apart from "planar optical window", above. Alternatively, a second element or region that is planar and that has a neutral impact on the passage of visible light, meaning major parameters of light do not change.	a planar optical window that is different than and discrete from the first planar optical window
opening	Needs no construction. Alternatively, a gap or vacant space.	a gap or vacant space that has a neutral impact on the passage of visible light, meaning that major parameters of light do not change.
second opening	Needs no construction. Alternatively, a second gap or vacant space.	an opening that is different than and discrete from the first opening
symmetrical across the axis of light direction with the first planar optical window / first opening output side of aspheric lens located between the first and second planar optical windows / first and second openings.	Needs no construction. Alternatively, the first planar optical window and the second planar optical window (or first window and second window) are symmetrical. Needs no construction.	To the extent "axis of light direction" can be construed, Defendants propose the following construction: symmetrical on opposite sides of the axis of light direction, but not around the axis. output side of aspheric lens located in the space separating the first and second openings and that does not extend past the plane defined by the first and the second openings
total internal reflection surface	A surface that reflects all of the light rays that strike it and does not allow any light rays to pass through it.	a surface that reflects all of the light rays that strike it and does not allow any light rays to pass through it and that is designed by receiving maximum and minimum output angles; receiving a location of a portion of the light transformer with respect to a light source that provides light; and iteratively point-by-point calculating an optical transformer reflective surface by providing an associated increment for an output angle for each increment of an input angle, the associated increment for the output angle being consistent with a predetermined output intensity

Disputed Term	Plaintiff's Construction	Defendants' Construction
		distribution to reflect light provided
		by the light source according to the
		received maximum and minimum
		output angles based on the received
		location of a portion of the light
		<u>transformer.</u>

'418 Patent

Disputed Term	Plaintiff's Construction	Defendants' Construction
light pipe	An optical structure that transfers	An optical element that channels
	light.	the light from the light source to the
		light transformer.
omnidirectional	The intensity of the emitted light is	Indefinite.
pattern in a	the same in all directions in a	To the extent a construction is
horizontal plane	horizontal plane (i.e., when the	possible, GE and Walmart propose:
	light pipe is viewed from the top or	pattern of light that is reflected in
	bottom).	all directions in the plane that is
		perpendicular to the central axis of
		the light source.
precalculated	The angular intensity of the emitted	An angular luminous intensity
angular luminous	light, when viewed in a vertical	distribution in a vertical plane
intensity distribution	plane (i.e., when the light pipe and	calculated in advance, where the
in a vertical plane	transformer are viewed from the	transformer is designed taking into
	side), forms a pattern that is	account the angular luminous
	calculated or specified in advance.	intensity distribution of the light
		emitted by the light source as a
11	No. 1	design input parameter.
curved conical reflective surface	Needs no construction.	A cone-shaped curved surface that
Teffective surface	Alternatively, a reflective surface in the shape of a cone having a curved	reflects the light rays that strike it and that is designed by receiving
	edge when the surface of the	maximum and minimum output
	transformer is viewed from the side	angles; receiving a location of a
	or in profile.	portion of the light transformer
	of in profile.	with respect to a light source that
		provides light; and iteratively point-
		by-point calculating an optical
		transformer reflective surface by
		providing an associated increment
		for an output angle for each
		increment of an input angle, the
		associated increment for the output
		angle being consistent with a
		predetermined output intensity
		distribution to reflect light provided

Disputed Term	Plaintiff's Construction	Defendants' Construction
		by the light source according to the
		received maximum and minimum
		output angles based on the received
		location of a portion of the light
		transformer.
second end	Needs no construction.	An end that is different than and
	Alternatively, an end that is	discrete from the first end.
	opposite the first end.	
lighting system	Needs no construction.	GE/Walmart, as to accused GE
		products: ordinary and customary
		meaning.
		Walmart, as to accused Great Value
		products: a luminaire.
close association	Needs no construction.	Indefinite.
	Alternatively, near or close by.	
close proximity	Needs no construction.	Indefinite.
	Alternatively, near or close by.	

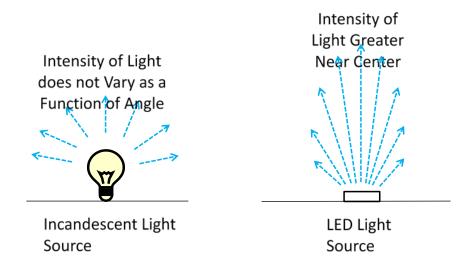
Further, the parties have agreed to the construction of the following terms and request that the Court adopt these agreed constructions.

Claim Term	Agreed Construction
predetermined pattern	A light pattern specified in advance, where the transformer is
	designed taking into account the angular luminous intensity
('959 patent - claims 1,3,6)	distribution of the light emitted by the light source as a design
	input parameter.
transformer axis coaxial to the	The transformer and the light pipe have a common axis or
longitudinal axis of the light pipe	centerline.
('418 patent - claim 24)	

III. BACKGROUND

A. The Technology In Dispute

The asserted patents generally relate to devices and methods for efficiently redirecting and redistributing light emitted from a light source in a predetermined pattern. Traditional sources of light, such as incandescent light bulbs, generate light that emanates in nearly all directions with equal intensity. In contrast, newer sources of light, such as LEDs (light emitting diodes), generate light that emanates in particular known patterns, where the intensity of the light is oftentimes higher in the center of the light distribution.



A key feature disclosed in the asserted patents is the use of precisely designed reflective surfaces to output light in a desired predetermined pattern, taking into account the particular angular intensity distribution of the light source. Thus, the innovative light transformers of the asserted patents have particular application in the field of the optics used with LED light sources.

Light transformers having various geometries are disclosed. For the purposes of the asserted claims of the '959 patent, the light transformer geometry disclosed in the cross-section of Figure 7 is illustrative.

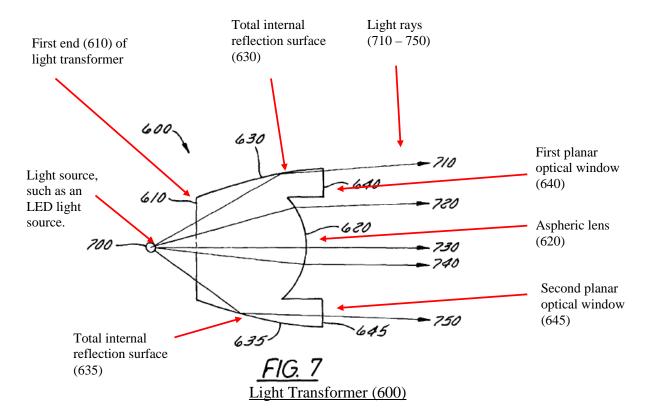
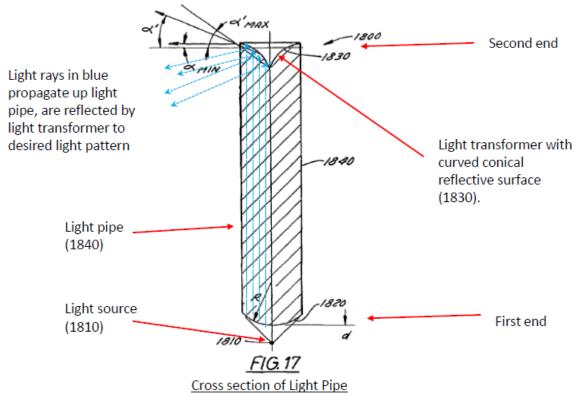


Figure 7 shows a cross-sectional view of a light transformer (600) corresponding to asserted claim 1 of the '959 patent. Light source (700) emits light rays in the direction of the light transformer (600). *See* '959 patent, Ex. 1, at col. 5, lines 4-21. Light rays (713-750) enter the first end of the light transformer (610). Certain light rays (710) and (750) enter the light transformer and are internally reflected by the outer surfaces (630) and (635), into the interior of the transformer. These light rays may pass through first and second planar optical windows (640) and (645), respectively, and are directed out in a desired direction and in a desired pattern. Other light rays (720, 730, 740) enter the central portion of the light transformer and are directed through a centrally located aspheric lens (620) and out of the transformer. The axis of light direction, shown in blue broken line above, is also referenced in the specification of the '959 patent. *See* Ex. 1, at col. 2, lines 6-26.

For the purposes of asserted claim 24 of the '418 patent, the light transformer geometry

disclosed in the side view cross-section of Figure 17 is applicable.



Light from light source (1810) propagates up light channel or light pipe (1840) and is reflected at reflective surface (1830). *See* '418 patent, Ex. 2, at col. 8, line 63- col. 9, lines 13. The reflected light thereafter passes into the environment in a desired predetermined pattern when, as above, the light pipe is viewed from the side.

B. Claims of the '959 Patent

The '959 patent contains seven claims, including independent claims 1 and 4. Asserted claims 1, 3, 4, 6 & 7 are reproduced below, with the certain terms relevant to the present claim construction proceeding <u>underlined and in bold</u>.

- 1. A <u>light transformer</u> device for <u>highly efficient</u> directing and redistributing light from a light source in a predetermined pattern, comprising:
 - a **first end** that receives light from the light source;
 - a **second end** that outputs the received light, the second end located on an opposite end of the device from the first end;

- a <u>first member</u> located on a <u>third end</u> of the device between the first end and the second end, wherein the first member has an outer wall comprising a <u>total internal reflection surface</u> that <u>redirects</u> and <u>redistributes</u> the received light in a direction of the second end;
- a <u>first planar optical window</u> located at an end of the first member, the first planar optical window being substantially perpendicular to the axis of light direction;
- a <u>second member</u> located on a <u>fourth end</u> of device, the fourth end located on an opposite end of the device from the third end, between the first end and the second end, the second member having an outer wall comprising a <u>total internal reflection surface</u> which <u>redirects</u> and <u>redistributes</u> the received light in a direction of the second end;
- a **second planar optical window** located at an end of the second member, the second planar optical window being substantially perpendicular to the axis of light direction, the second planar optical window further being **symmetrical across the axis of light direction with the first planar optical window**; and
- an aspheric lens located between the first and the second members, the aspheric lens having an input side on the first end of device and an output side on the second end of device, the <u>output side of aspheric lens located</u> between the first and the second planar optical windows.
- 3. The light transformer of claim 1, wherein the light transformer directs and redistributes light from the light source in a predetermined pattern with <u>low</u> divergence or substantially parallel with an axis of light direction.
 - 4. A <u>light transformer</u> device comprising:
 - a **first end** that receives light from a light source;
 - a <u>second end</u> that outputs the received light, the second end located on an opposite end of the device from the first end;
 - a <u>first member</u> located on a <u>third end</u> of the device between the first end and the second end, wherein the first member has an outer wall comprising a <u>total internal reflection surface</u> that <u>redirects</u> and <u>redistributes</u> the received light in a direction of the second end;
 - a <u>first opening</u> located at an end of the first member, the first opening being substantially perpendicular to the axis of light direction;

- a <u>second member</u> located on a <u>fourth end</u> of device, the fourth end located on an opposite end of the device from the third end, between the first end and the second end, the second member having an outer wall comprising a <u>total internal reflection surface</u> which <u>redirects</u> and <u>redistributes</u> the received light in a direction of the second end;
- a **second opening** located at an end of the second member, the second opening being substantially perpendicular to the axis of light direction, **the second opening further being symmetrical across the axis of light direction with the first opening**; and
- an aspheric lens located between the first and the second members, the aspheric lens having an input side on the first end of device and an output side on the second end of device, the output side of aspheric lens located between the first and the second openings.
- 6. The light transformer of claim 4, wherein the light transformer redirects and redistributes light from the light source in a predetermined pattern with <u>low</u> <u>divergence or substantially parallel with an axis of light direction</u>.
- 7. The light transformer of claim 4, wherein the <u>first opening</u> is a <u>first planar</u> optical window and the <u>second opening</u> is a <u>second planar optical</u> window.

C. Claim 24 of the '418 Patent

Asserted claim 24 is reproduced below, with the certain terms relevant to the present claim construction proceeding <u>underlined and in bold</u>.

24. A **lighting system**, comprising:

a **housing**;

- a light assembly supported by the housing, the light assembly including
- a light source for emitting light; and
- a <u>light pipe</u> having a first end in <u>close association</u> with the light source for coupling the light thereinto, and a second end opposite the first end from which the light is dispersed; and
- a <u>light transformer</u> between the first end and the second end of the light pipe in <u>close proximity</u> to the second end with a transformer axis coaxial to the longitudinal axis of the light pipe, the <u>light</u> <u>transformer</u> having a <u>curved conical reflective surface</u> that

<u>redirects</u> and <u>redistributes</u> light received from the light source, wherein the <u>light transformer</u> provides an <u>omnidirectional</u> <u>pattern in a horizontal plane</u> with <u>precalculated angular luminous intensity distribution in a vertical plane</u>.

D. The Original Prosecution History of the Parent '911 Patent

The parent '911 patent resulted from the prosecution of an original application, U.S. Patent Application No. 10/068,200, filed on May 8, 2000. Claim 6 of the '911 patent is relevant because it is similar the asserted claims of the '959 patent. An abbreviated summary of the prosecution of the '911 patent is provided below in timeline format.

May, 8, 2000: Application originally filed with claims 1-10. Ex. 4 (originally filed

claims).

July 27, 2001: First Office Action, rejecting all claims. Ex. 5.

Jan. 28, 2002: Amendment responding to Examiners arguments and adding new claim 11

(from which asserted claim 6 would later issue). Ex. 6.

April 10, 2002: Office Action allowing claims 5 and 11. Certain other pending claims

rejected. Ex. 7.

Thereafter, prosecution continued with respect to other claims, and allowed claim 11 eventually issued as claim 6 in the '911 patent.

E. The Prosecution of the '959 Patent

The '959 patent resulted from the prosecution of an application filed May 14, 2010, claiming priority to the '911 patent. The '959 patent was prosecuted during the ongoing reexamination of the '911 patent. Thus, materials from the '911 patent reexamination were submitted to the PTO and considered by the Examiner. *See* '959 patent, Ex. 1, pp. 2-3 (listing reexamination materials considered). During prosecution, the Examiner did not ever reject any of the claims that eventually issued in the '959 patent. Importantly, the file history of the '959 patent includes a statement disclaiming certain limiting statements made during the prosecution of the '911 patent. *See* Amendment and Request to Withdraw Notice of Allowance

dated Oct. 8, 2011 (Ex. 8) at 5.

IV. LEGAL STANDARDS

A. General Rules For Claim Construction

Claim construction is a matter of law. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 977 (1996); *Cybor Corp., v. FAS, Inc.*, 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). Claim construction begins with, and remains focused on, the language of the claims. *Biagro W. Sales Inc. v. Grow More Inc.*, 423 F.3d 1296, 1302 (Fed. Cir. 2005); *see also, Aerotel, Ltd. v. Telco Group, Inc.*, 2011 WL 3100334, at *8 (Fed. Cir. 2011).

It is heavily presumed that a claim term conveys its "ordinary and customary meaning." *American Piledriving Equipment, Inc. v. Geoquip, Inc.*, 637 F.3d 1324, 1332 (Fed. Cir. 2011); *see Phillips v. AWH Corp.*, 415 F.3d 1303, 1302 (Fed. Cir. 2005)(en banc). The "ordinary and customary meaning" of a claim term is the meaning one of ordinary skill in the relevant art would accord the term at the time the patent application was filed. *Phillips*, 415 F.3d at 1303.

Courts indulge this heavy presumption because to interpret ordinary language in a manner different from the plain import of its terms would be unjust to the public and an evasion of the law. *Id.* at 1312. This heavy presumption may be overcome if the patentee acts as his own lexicographer and defines the term differently from its ordinary meaning; or expressly narrows the scope of his claims with words of manifest restriction. *Helmsderfer v. Bobrick Washroom Equip.*, *Inc.*, 527 F.3d 1379, 1381 (Fed. Cir. 2008).

According to the Federal Circuit, claim term construction entails working through a progression of analytic steps; the source consulted for each progressive step declines in persuasiveness. *See Phillips*, 415 F.3d at 1311–24. These sources, in order from most persuasive to least persuasive, are:

1. language of the claim term itself;

- 2. surrounding language of the claim;
- 3. language of the other claims;
- 4. language of the rest of the specification;
- 5. file history; and
- 6. external evidence

1. Language of the Claim Term Itself

The language of the claim term itself is the starting point in the claim construction process. *See, e.g., Biagro*, 423 F.3d at 1302 (Fed. Cir. 2005).

2. Surrounding Claim Language

If the ordinary and customary meaning of a claim term is not readily apparent on the face of the term, the Court looks next to the words of the claims themselves to define the scope of the patent invention; the claims provide substantial guidance as to the meaning of claim terms. *See Phillips*, 415 F.3d at 1312, 1314; *ERBE Elektromedizin GmbH v. Canady Technology LLC*, 629 F.3d 1278, 1284 (Fed Cir. 2010).

3. Language of the Other Claims

If the ordinary and customary meaning of the claim term is not evident from the surrounding claim language, the Court may next look to the language of the other claims. *Phillips*, 415 F.3d at 1314.

4. Language of the Specification

The Court may next look to the rest of the patent specification as a guide to determine the ordinary and customary meaning of a disputed claim term. *Id.* at 1314. However, the Court must take "extreme care" to avoid imputing limitations from the specification into the claims. *MBO Labs., Inc. v. Becton, Dickinson & Co.,* 474 F.3d 1323, 1333 (Fed. Cir. 2007); *Amgen, Inc. v. Hoechst Marion Rousell, Inc.,* 314 F.3d 1313, 1325 (Fed. Cir. 2003). It is the function of the claims, not the specification, to define the scope of patent protection. *Phillips,* 415 F.3d at 1312;

SuperGuide Corp. v. DirecTV Enters., Inc., 358 F.3d 870, 875 (Fed. Cir. 2004) (asserting that the written description may not substitute for and may not be used to rewrite the claim language chosen by the patentee; "Specifications teach. Claims claim."); see also, Arlington Industries, Inc. v. Bridgeport Fittings, Inc., 632 F.3d 1246, 1254 (Fed. Cir. 2011).

As a corollary to this rule, the Court may not interpret claim terms to limit the claims to specific embodiments of the invention articulated in the specification, *Phillips*, 415 F.3d at 1323, even if the specification only describes one embodiment, unless this is the patentee's express intent. *Martek Biosciences Corp. v. Nutrinova, Inc.*, 579 F.3d 1363, 1381 (Fed. Cir. 2009). The claims, not embodiments disclosed in the specification, define the scope of patent protection. *Dow Chem. Co. v. Sumitomo Chem. Co.*, 257 F.3d 1364, 1378 (Fed. Cir. 2001).

5. Prosecution History

The Court may next look to other resources available to the public that show that a person of skill in the art would have understood disputed claim language to mean, such as the prosecution history. *Phillips*, 415 F.3d at 1314. However, the Federal Circuit has cautioned that the prosecution history often lacks the clarity of the specification and thus is less useful for claim construction purposes. *Id.* at 1317.

6. Extrinsic Evidence

Lastly, courts may rely on extrinsic sources of evidence, such as expert testimony, treatises, and dictionaries, to determine the meaning of a claim term. *Id.* at 1317. The Federal Circuit has emphasized, however, that evidence intrinsic to the patent, such as the language of the claims and the specification, is preferred over extrinsic sources. *Id.* at 1317.

B. *O2 Micro* and the Court's Obligation to Construe Claims

The Federal Circuit has held that district courts should resolve fundamental disputes

between the parties regarding the scope of claim terms. *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008). However, the Federal Circuit also emphasized in *O2 Micro* that "district courts are not (and should not be) required to construe every limitation present in a patent's asserted claims." *Id.* (citing *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (stating that "Claim construction is not an obligatory exercise in redundancy.")). "[C]laim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims." *O2 Micro*, 521 F.3d at 1362. *See also, e.g., Astute Tech., LLC v. Learners Digest Int'l LLC*, No. 2:12-CV-689-JRG, 2014 WL 1385191, at *17 (E.D. Tex. Apr. 2, 2014) ("Because construing the term will only tend to confuse rather than clarify, [the term] requires no further construction.").

C. Preamble As Limitation

A preamble is not limiting "where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention." *Braintree Labs., Inc. v. Novel Labs., Inc.*, No. 2013-1438, 2014 WL 1584451, *6 (Fed. Cir. Apr. 22, 2014) (quoting *Rowe v. Dror*, 112 F.3d 473, 478 (Fed.Cir.1997)); *see also Pitney Bowes, Inc. v. Hewlett–Packard Co.*, 182 F.3d 1298, 1305 (Fed.Cir.1999) (explaining the preamble is not limiting if "the body of the claim fully and intrinsically sets forth the complete invention, including all of its limitations, and the preamble offers no distinct definition of any of the claimed invention's limitations, but rather merely states, for example, the purpose or intended use of the invention"). Conversely, "if the claim preamble is 'necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." *Braintree*, 2014 WL 1584451 at *6 (quoting *Pitney Bowes*, 182 F.3d at 1305). The

determination of "[w]hether a preamble stating the purpose and context of the invention constitutes a limitation of the claimed process is determined on the facts of each case in light of the overall form of the claim, and the invention as described in the specification and illuminated in the prosecution history." *Cartner v. Alamo Grp., Inc.*, 2013-1293, 2014 WL 1394951, *7 fn. 1 (Fed. Cir. Apr. 11, 2014) (citation omitted)).

D. Product by Process Claims

Attempts to convert apparatus claims into method claims or product-by-process claims are generally disfavored. The Federal Circuit has stated that merely revealing the method of manufacture during the prosecution does not limit a product claim to that particular method. *See, e.g., Vanguard Prods. Corp. v. Parker Hannifin Corp.*, 234 F.3d 1370, 1372 (Fed. Cir. 2000). "Courts must generally take care to avoid reading process limitations into an apparatus claim...because the process by which a product is made is irrelevant to the question of whether that product infringes a pure apparatus claim." *Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, 512 F.3d 1338, 1344 (Fed. Cir. 2008).

V. ARGUMENT – CLAIM TERMS

Discussed below are the parties' competing proposed constructions.

A. Redirects

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Changing the direction of light rays.	Changing a direction of light rays, or changing
	the propagation direction of the light rays.
	while maintaining the ordering of the rays and
	the relative intensity among the ensemble of
	rays.

The term "redirects" is found in claims 1, 4, and 6 of the '959 patent, and in claim 24 of the '418 patent. It is always used in conjunction with the term "redistributes" (discussed below) to describe the interaction of light with a reflective surface. Plaintiff's construction is correct,

firstly because plaintiff's construction is consistent with the terms' ordinary and customary meaning. Plaintiff's construction is also consistent with the prosecution history. *See*, *e.g.*, Ex. 6 at 6-7 (in discussing claimed invention, "This is not just redirection (change of [light] ray direction), but redistribution of light (change of angular intensity distribution).") (emphasis added). Moreover, the applicant's use of the word "just" in the foregoing porting of the file history informs the relationship between redirection (a broader concept) and redistribution (the narrower feature included within the scope of redirection).

Defendants' proposed construction adds limiting language that is inconsistent with the ordinary and customary meaning. *See Phillips*, 415 F.3d at 1302. Second, defendants' construction is also improper because it is inconsistent with the surrounding claim language, that is, the definitions proposed by both sides for "redistribution." Defendants acknowledge and intend this inconsistency for the purpose of arguing that the terms "redirects" and "redistributes" are collectively inoperable and therefore indefinite. Defendants' construction is believed to be based upon a misreading of the following passage from the reexamination of the '911 patent:

In general, <u>redirecting</u> light refers to changing a direction of a light rays, or changing the propagation direction of the light rays, while maintaining the ordering of the rays and the relative intensity among the ensemble of rays. <u>Redistributes</u> refers to a more complex operation, which involves a change in angular intensity distribution of the light from a light source. (citations to '911 patent specification and file history omitted).

Ex. 9, at 15 (emphasis added). The above italicized text only makes sense in the case of an optic that only redirects light, but does <u>not</u> redistribute light. Thus, the first quoted sentence begins with the limiting phrase, "in general." In all asserted claims, the optic must <u>both redirect</u> light and also <u>redistribute</u> light. A definition for "redirects" that requires "maintaining the ordering of the rays and the relative intensity among the ensemble of rays" is starkly inconsistent with any proper construction for "redistributing" light rays – which *requires* changing the ordering and

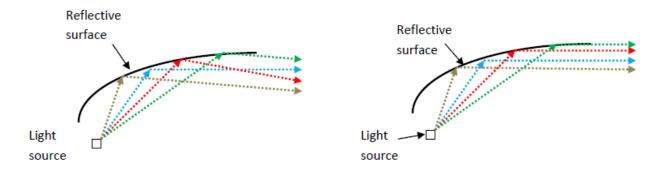
relative intensity among the ensemble of rays. Since defendants' proposed construction would lead to this nonsensical result, it is improper and should be rejected.

B. Redistributes

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Changing the angular intensity distribution of	Changing the angular intensity distribution of
light rays, including changing the relative order	light from a light source by changing the
or sequence of light rays.	ordering and relative intensity among the
	ensemble of rays.

The parties' competing constructions are similar – both sides agree that redistribution involves changing the angular intensity distribution of light from a light source, as the rays are reflected from a reflective surface such as a total internal reflective ("TIR") surface. However, the parties' constructions contain an important distinction relating to the sequencing of light rays. Plaintiff's construction makes clear that the claimed invention is for a nonimaging optic where the relative order or sequence of the reflected light rays is expected to change. Defendants' construction is more broad and does not contain such limits.

The term redistribution is discussed in the prosecution history of the '911 patent and in the '911 reexamination, *e.g.*, Exhibit 6 at pages 6-7, in the context of distinguishing certain prior art structures which do not redistribute light. The diagrams below are illustrative.



Redistribution of Light - Invention

Parabolic Reflectors - Prior Art

In both cases, the light source provides light having a known particular angular distribution, and the rays are ordered in the following sequence: brown, blue, red, and green. In the prior art, for example, structures in which the curvature of the reflective surface is parabolic, reflected light is condensed and the order or sequence of the light rays is reversed. In the claimed invention, in contrast, not only is the distribution of light rays condensed and redirected forward, but the sequence of the light rays also changes.

Plaintiff's construction is correct because it is more precise and consistent with the patent owner's arguments made during the prosecution of the '911 patent and during the reexamination of the '911 patent. See, e.g., Respondent's Appeal Brief from '911 Patent Reexamination, Exhibit 10, at 5 ("It is well understood that the ordinary and customary meaning for redistributes also involves changing the relative order or sequence of the light rays...If the light rays that are reflected off the outer walls are not reordered in their relative position to one another, then there is no redistribution, only redirection. Only if the light rays that are reflected off the outer walls are reordered in their relative position to one another, would there be redirection and redistribution."). Plaintiff's construction is also correct because it is consistent with statements of the patent owner during the original prosecution of the '911 patent, wherein the patent owner describes the claimed optics as "nonimaging" optics, in contrast to the prior art "imaging" optics. See, e.g., Ex. 4, at 6 & 9. Imaging optics essentially transmit images; they require that the order of light rays be maintained, in order for the image to be maintained. In contrast, nonimaging optics such as those claimed here cannot transmit images because they involve changing the ordering of light rays in order to obtain the desired predetermined pattern of outputted light. Defendants' construction is not correct because it is less precise and helpful - in light of plaintiff's understanding of defendants' prior art theories, it is not clear whether defendants' construction would encompass prior art imaging optics.

C. Light transformer

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Needs no construction. Alternatively, a	An optic that is not round in that it can be
structure that changes or transforms light in	extended in a horizontal direction
some manner.	perpendicular to an optical axis.

This term is recited in the preamble of independent claims 1 and 4 of the '959 patent, and in the body of claim 24 of the '418 patent. The terms needs no construction, at least with respect to the '959 patent, because the bodies of those claims define a structurally complete invention and use the preamble only to state a purpose or intended use for the invention. *See Braintree*, 2014 WL 1584451 at *6. In a similar manner, claim 24 of the '418 patent recites a lighting system comprising a light transformer with the series of structure limitations as follows:

a <u>light transformer</u> between the first end and the second end of the light pipe in close proximity to the second end with a transformer axis coaxial to the longitudinal axis of the light pipe, the <u>light transformer having a curved conical reflective surface</u> that redirects and redistributes light received from the light source, wherein the light transformer provides an omnidirectional pattern in a horizontal plane with precalculated angular luminous intensity distribution in a vertical plane.

Should the court wish to construe this term, is should adopt plaintiff's proposed construction because it is consistent with the ordinary and customary meaning of the term. Defendants' construction should be rejected as an improper attempt to read in certain limitations from the specification. Defendants' construction should also be rejected as inconsistent with the specification, which discloses transformers that are round. *See, e.g.,* '959 patent, Ex. 1, at Figs. 1 & 2 (transformer 100 is round); Fig 17 (transformer has reflective surface 1830 which is round when viewed from above).

D. Highly efficient

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
Needs no construction.	Indefinite.

This term is recited only in the preamble of independent claim 1 of the '959 patent. It

need not be construed because the body of claim 1 defines a structurally complete invention and uses the preamble only to state a purpose or intended use for the invention. *See Braintree*, 2014 WL 1584451 at *6. If the term were construed and given its ordinary and customary meaning, *i.e.*, efficient to a high degree or the like, such construction would offer no apparent benefit to a jury or the Court. *See*, *e.g.*, *Accolade Sys. LLC v. Citrix Sys.*, *Inc.*, 634 F. Supp. 2d 738, 747 (E.D. Tex. 2009) ("The intrinsic record does not give any specialized meaning to "being delivered" and the plain meaning...is clear from the words of the term...offering a construction could only complicate the already clear and well understood language used in the term").

E. Axis of light direction / Low divergence or substantially parallel with an axis of light direction

Disputed Term	Plaintiff's Proposed Construction	Defendants' Proposed
		Construction
axis of light	Needs no construction.	Indefinite.
direction		
low divergence or	Needs no construction.	To the extent "axis of light
substantially parallel	Alternatively, "low divergence"	direction" can be construed,
with an axis of light	means diverging less than about 15	Defendants propose the following
direction	degrees from the axis of light	construction: all rays from the light
	direction.	transformer are nearly parallel to an
		axis of light direction.

The term "axis of light direction" appears by itself in claims 1 and 4, and appears together with "low divergence or substantially parallel" in claims 3 and 6. The term "axis of light direction" is also referenced in the specification at column 2, lines 6-26. *See supra*, p. 8 (diagram showing the axis of light direction for one embodiment). While the term "axis of light direction" is clearly not indefinite, it need not be construed because construing the term with additional words of geometric precision would likely only tend to confuse rather than clarify. *See*, *e.g.*, *Accolade Sys.*, 634 F. Supp. 2d at 747.

Similarly, there is no reason for the Court to construe the phrase "low divergence or

substantially parallel with an axis of light direction." These are relatively simple terms that a jury would likely understand. If the Court determines that construction is appropriate, then a proper construction should recognize that the term "low divergence" is different from and somewhat broader than "substantially parallel." The terms should both be given their ordinary meaning, and plaintiff notes that a related patent discloses exemplary numerical value of 6 to 15 degrees for low divergence. *See* U.S. Patent No. 7,503,669 (Ex. 11), at col. 2, line 6

F. Second / Third / Fourth end

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
Needs no construction. Alternatively, in the	second end - an end of the light transformer
context of a cross section of a light	that is different than and discrete from the first,
transformer, a second/ third/fourth extremity.	third, and fourth ends.
	third end - an end of the light transformer that
	is different than and discrete from the first,
	second, and fourth ends.
	fourth end - an end of the light transformer that
	is different than and discrete from the first,
	second, and third ends.

These three related terms are found in claims 1 and 4 of the '959 patent. As the terms relate to simple words with simple plain meanings, so no construction is necessary. *See, e.g., Accolade Sys.*, 634 F. Supp. 2d at 747. Alternatively, the Court should construe these terms as above with reference to the cross section of a light transformer, as is described in the specification of the '959 patent. *See* Ex. 1, col. 5, lines 4-21 & Fig. 7. *See O2 Micro*, 521 F.3d at 1368 ("Claim construction is not an obligatory exercise in redundancy.").

G. Second member

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
Needs no construction. Alternatively, in the	a member different than and discrete from the
context of a cross section of a light	first member
transformer, a second region.	

This term is also found in claims 1 and 4 of the '959 patent. See Argument for Second /

Third / Fourth end, *supra*.

H. Planar optical window

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
An element <u>or region</u> that is planar and that has	an optical element that is planar and that has a
a neutral impact on the passage of visible light,	neutral impact on the passage of visible light,
meaning major parameters of light do not	meaning that major parameters of light do not
change.	change.

This term is found in claims 1 and 7 of the '959 patent, and the parties propose similar constructions based on the following statement for the file history of the '911 patent:

A planar optical window means an optical element with neutral impact on the passage of light. In other words, major parameters of light such as frequency (wavelength), polarization, direction of propagation does not change.

Ex. 6, at 8. Plaintiff's proposed construction includes the text "or region" following the word "element." Plaintiff's construction is more appropriate because defendants' proposed definition could later be interpreted as overly limiting. For example, defendants' construction could potentially be read as excluding accused optics wherein the window may be located internally within an integral accused optic. Plaintiff's construction is more appropriate because it makes clear that the recited window may reside within an integral optic. *See, e.g., MBO Labs.*, 474 F.3d at 1333 (explaining that courts must take "extreme care" to avoid imputing limitations from the specification into the claims).

I. Second planar optical window

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
Needs no construction, apart from "planar	a planar optical window that is different than
optical window", above. Alternatively, a	and discrete from the first planar optical
second element or region that is planar and that	window
has a neutral impact on the passage of visible	
light, meaning major parameters of light do not	
change.	

See Argument for Second / Third / Fourth end, supra.

J. Opening

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
Needs no construction. Alternatively, a gap or	a gap or vacant space that has a neutral impact
vacant space.	on the passage of visible light, meaning that
	major parameters of light do not change.

This term appears in independent claim 4 and dependent claim 7 of the '959 patent. Plaintiff's construction is correct because it is consistent with the ordinary and customer meaning of the term. It is also correct because it is consistent with the doctrine of claim differentiation. Since claim 1 and 4 are somewhat similar, and since claim 1 recites windows and claim 4 recites openings, it is presumed that opening and windows have different meanings. This view is strengthened by consideration of dependent claim 7, which recites that "the first opening is a first planar optical window and the second opening is a second planar optical window." *See Phillips*, 415 F.3d at 1314 (courts should look to the language of other claims to determine claim scope). In contrast, defendants' construction improperly attempts to copy over the limiting language from the file history for the term window. This cannot be correct, since there is nothing in the file history that addresses the term "opening."

K. Second opening

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
Needs no construction. Alternatively, a second	an opening that is different than and discrete
gap or vacant space.	from the first opening

See Argument for Second / Third / Fourth end, supra.

L. Symmetrical across the axis of light direction with the first planar optical window / first opening

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
Needs no construction. Alternatively, the first	To the extent "axis of light direction" can be
planar optical window and the second planar	construed, Defendants propose the following
optical window (or first window and second	construction: symmetrical on opposite sides of
window) are symmetrical.	the axis of light direction, but not around the
	axis.

These related phrases are recited in claims 1 (first planar optical window) and 4 (first opening), respectively, of the '959 patent. These two phrases need not be construed because construing them with additional words of geometric precision would likely only tend to confuse rather than clarify. *See*, *e.g.*, *Accolade Sys.*, 634 F. Supp. 2d at 747. Alternatively, the plaintiff's construction is correct because it is consistent with ordinary and customary meaning and every phraseology. Defendants' construction is not correct because it is confusing and is likely to be uninformative to a jury. To the extent that it is understood, it improperly and without basis imports a limitation from the specification (*i.e.*, "but not around the around the axis").

M. <u>Output side of aspheric lens located between the first and second windows / first and second openings</u>

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
Needs no construction.	output side of aspheric lens located in the space
	separating the first and second openings and
	that does not extend past the plane defined by
	the first and the second openings

The phrase is recited in claims 1 and 4 of the '959 patent. Since the words in this phrase are simple words with simple plain meanings (the meaning of "aspheric lens" is not disputed), no construction is necessary. *See, e.g., Accolade Sys.*, 634 F. Supp. 2d at 747; *O2 Micro*, 521 F.3d at 1368 ("Claim construction is not an obligatory exercise in redundancy.").

N. Total internal reflection surface

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
A surface that reflects all of the light rays that	a surface that reflects all of the light rays that
strike it and does not allow any light rays to	strike it and does not allow any light rays to
pass through it.	pass through it and that is designed by
	receiving maximum and minimum output
	angles; receiving a location of a portion of the
	light transformer with respect to a light source
	that provides light; and iteratively point-by-
	point calculating an optical transformer
	reflective surface by providing an associated

increment for an output angle for each
increment of an input angle, the associated
increment for the output angle being consistent
with a predetermined output intensity
distribution to reflect light provided by the
light source according to the received
maximum and minimum output angles based
on the received location of a portion of the
light transformer.

The phrase is recited in claims 1 and 4 of the '959 patent. Plaintiff's construction is correct because, consistent with ordinary and customary meaning, plaintiff's construction provides a simplified but useful definition for the well-known phenomenon known as total internal reflection. In contrast, defendants' construction begins with this concept and but then adds a series of additional concepts that would effectively convert claims 1 and 4 into product-by-process claims. Needless to say, this is not consistent with ordinary and customary meaning, it improperly seeks to read limitations from the specification into the claims, and it is disfavored under Federal Circuit precedence *E.g., Vanguard*, 234 F.3d at 1372 (holding that merely revealing the method of manufacture during the prosecution does not limit a product claim to that particular method); *Baldwin*, 512 F.3d at 1344 ("Courts must generally take care to avoid reading process limitations into an apparatus claim ... because the process by which a product is made is irrelevant to the question of whether that product infringes a pure apparatus claim.").

O. Light pipe

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
An optical structure that transfers light.	An optical element that channels the light from
	the light source to the light transformer.

This term is recited in claim 24 of the '418 patent. The parties propose similar constructions. However, defendants' construction using the word "channels" is more narrow and could be seen to unduly limit the scope of the claim by requiring light rays to bounce off the

sides of the light pipe (*i.e.*, to be channeled) as they travel from the light source to the light transformer. Essentially, this would be improperly reading a limitation from the specification into the claim. Plaintiff's proposed construction is more appropriate because it does not implicate such a requirement.

P. Omnidirectional pattern in a horizontal plane

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
The intensity of the emitted light is the same in	Indefinite.
all directions in a horizontal plane (i.e., when	To the extent a construction is possible, GE
the light pipe is viewed from the top or	and Walmart propose:
bottom).	pattern of light that is reflected in all directions
	in the plane that is perpendicular to the central
	axis of the light source.

This term is recited in claim 24 of the '418 patent. Plaintiff's construction is correct because it uses relatively simple words that will accurately inform a jury and yet still comport with the ordinary and customary meaning. The construction of GE and Walmart does not accurately reflect that the intensity of light is the same in all directions in a horizontal plane, and it uses words to describe the horizontal plane that while accurate, do not simplify concepts.

Q. Precalculated angular luminous intensity distribution in a vertical plane

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
The angular intensity of the emitted light,	An angular luminous intensity distribution in a
when viewed in a vertical plane (i.e., when the	vertical plane calculated in advance, where the
light pipe and transformer are viewed from the	transformer is designed taking into account the
side), forms a pattern that is calculated or	angular luminous intensity distribution of the
specified in advance.	light emitted by the light source as a design
	input parameter.

This term is recited in claim 24 of the '418 patent and describes the pattern of the emitted light in a vertical plane. Plaintiff's construction is appropriate because it simplifies and gives context to the jury as to what is meant be the "vertical plane," and because it is consistent with ordinary and customary meaning. Defendants' construction departs from ordinary and

customary meaning and imports limitations from the specification and file histories.

R. Curved conical reflective surface

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
Needs no construction. Alternatively, a	A cone-shaped curved surface that reflects the
reflective surface in the shape of a cone having	light rays that strike it and that is designed by
a curved edge when the surface of the	receiving maximum and minimum output
transformer is viewed from the side or in	angles; receiving a location of a portion of the
profile.	light transformer with respect to a light source
	that provides light; and iteratively point-by-
	point calculating an optical transformer
	reflective surface by providing an associated
	increment for an output angle for each
	increment of an input angle, the associated
	increment for the output angle being consistent
	with a predetermined output intensity
	distribution to reflect light provided by the
	light source according to the received
	maximum and minimum output angles based
	on the received location of a portion of the
	light transformer.

This term is recited in claim 24 of the '418 patent. It needs no construction because the words of the term are relatively simple. Alternatively, plaintiff proposes a construction that uses relatively simple words to give context to the term consistent with the ordinary and customary meaning. *See*, *e.g.*, '418 patent, Ex. 2, at Fig. 17. Defendants' construction adds a plethora of additional requirements that essentially convert claim 24 into a product by process claim. This is improper because it is not justified by either the specification of the prosecution history. *See also*, Argument for Total internal reflection surface, *supra*.

S. Second end

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
Needs no construction. Alternatively, an end	An end that is different than and discrete from
that is opposite the first end.	the first end.

This term is also found in claim 28 of the '418 patent. *See* Argument for Second / Third / Fourth end, *supra*.

T. Lighting system

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
Needs no construction.	GE/Walmart, as to accused GE products:
	ordinary and customary meaning.
	Walmart, as to accused Great Value products:
	a luminaire.

This is a simple term found in the preamble of claim 24 of the '418 patent. It should not be construed because the preamble of claim 24 is not limiting (*see* case law in section IV.C., *supra.*), and the Court need not construe it because it is such a simple term. *See O2 Micro*, 521 F.3d at 1368 ("Claim construction is not an obligatory exercise in redundancy."). The definition proposed by Walmart is not appropriate mainly because it introduces a definition that is more complex and less enlightening than the claim term it would propose to construe.

U. Close association / close proximity

Plaintiff's Proposed Construction	Defendants' Proposed Constructions
Needs no construction. Alternatively, near or	Indefinite.
close by.	

These two related terms are found in claim 24 of the '418 patent. As both terms are simple words with simple plain meanings, they should be readily understood by the jury. If necessary, context can be provided by reference to Figure 17 of the '418 patent. However, no construction for these simple terms are believed to be necessary. *See, e.g., Accolade Sys.*, 634 F. Supp. 2d at 747.

VI. CONCLUSION

For the reasons discussed above, plaintiff respectfully requests that the Court issue a claim construction order consistent with its above constructions.

May 5, 2014

Respectfully submitted,

By: /s/ Henry Pogorzelski

Henry M. Pogorzelski – LEAD COUNSEL

Texas Bar No. 24007852

Michael J. Collins

Texas Bar No. 04614510

John J. Edmonds

Texas Bar No. 00789758

COLLINS, EDMONDS, POGORZELSKI,

SCHLATHER & TOWER, PLLC

1616 S. Voss Road, Suite 125

Houston, Texas 77057

Telephone: (281) 501-3425 Facsimile: (832) 415-2535

Email: hpogorzelski@cepiplaw.com

Stafford Davis

State Bar No. 24054605

THE STAFFORD DAVIS FIRM, PC

305 S. Broadway, Suite 406

Tyler, Texas 75702

Phone: (903) 593-7000

Fax: (903) 705-7369

Email: sdavis@stafforddavisfirm.com

ATTORNEYS FOR PLAINTIFF LIGHT TRANSFORMATION TECHNOLOGIES LLC

CERTIFICATE OF SERVICE

I hereby certify that all known counsel of record are being served with a copy of this document via electronic mail using the electronic mail address provided to the Court's ECF system:

May 5, 2014

/s/ Henry Pogorzelski Henry Pogorzelski